

AMENDMENTS TO THE SPECIFICATION

In the specification, please replace the original paragraph [0013] with the following amended paragraph [0013]:

[0013] A wind turbine 12 is configured for converting wind energy to mechanical energy. Wind energy is captured by the rotation of the wind turbine's blades. The tips of the blades travel at a speed ranging typically from about 50 m/s to 70 m/s. Mechanical power generated by the blades is transferred to a transmission system (not shown), which typically has an input of 20-50 rotations per minute (rpm) from a low-speed shaft attached to the blade and an output of 1000-1500 rpm for a high-speed shaft that is coupled to generator 14. In certain embodiments, the turbine 12 of FIG. 1 may be a gas turbine or another suitable drive system as discussed above.

In the specification, please replace the original paragraph [0018] with the following amended paragraph [0018]:

[0018] In a further embodiment, converter system 22 further comprises a third converter coupled to the fault winding of the transformer. Where provided, the third converter is configured to sense harmonic currents in the normal winding when the first and second ~~converter is converters~~ are operating in a normal mode, and to induce a current equal in magnitude to the harmonic current but of the opposite phase. Thus the harmonic current is canceled and the output at the secondary has minimum harmonics.

In the specification, please replace the original paragraph [0026] with the following amended paragraph [0026]:

[0026] Third converter 46 receives rectified output from rectifier 32. When operating in the normal mode, the third converter 46 is coupled to the fault winding 42 of the transformer via switch 48. In one embodiment, the third converter is coupled to the mid-

point 50 of the fault winding 42 via switch 48. In one embodiment, the switch 48 is implemented using a single-pole double-throw switch. Other switch configurations may, of course, be provided for interconnecting the third converter and the transformer winding.

In the specification, please replace the original paragraph [0027] with the following amended paragraph [0027]:

[0027] The third converter is configured for sensing harmonic currents in the normal winding, when the first and second ~~converter is converters are~~ operating in a normal mode. The third converter is configured to induce a current equal in magnitude to the harmonic current but of the opposite phase. The harmonic currents are effectively canceled thus precluding or reducing application of such harmonics to the load or grid to which the transformer is coupled.

In the specification, please replace the original paragraph [0030] with the following amended paragraph [0030]:

[0030] Sensing circuit 26 is configured for sensing an electrical parameter of the transformer 24 or of the circuitry coupled to the transformer. When the electrical parameter exceeds a threshold value, the converter system operates in a fault mode. The control circuitry receives signals from the sensing circuit 26 and provides control signals to switching circuit 30. The switching circuit is configured to couple the converters 34 and 36 in parallel when the converter system is operating in the fault mode. In addition, the switch 44 ~~is coupled selectively couples~~ the fault winding 42 to the normal winding 40. Thus, the normal winding 40 and the fault winding 42 are coupled to the converters 34 and 36, respectively, when the converter system is operating in the fault mode. A more detailed description of the converter system and associated circuitry is provided below.

In the specification, please replace the original paragraph [0031] with the following amended paragraph [0031]:

[0031] Fig. 3 is a circuit diagram illustrating an exemplary manner of implementing converter system 22 and associated circuitry according to one aspect of the invention. As illustrated in Fig. 3, the rectifier 32 receives a variable frequency output power from generator 14 on output terminals 54, 56 and 58. Rectifier 32, in the illustrated embodiment, is a three-phase rectifier circuit and is implemented using ~~diodes-80diodes~~ 60. Rectifier 32 comprises three legs, each leg comprising two diodes connected in series. Each output terminal of generator 14 is coupled to a corresponding leg of the rectifier 32. At any instant of time, only one diode 60 from each leg is active (i.e. conducting). Thus, the output of the generator 14 is rectified by rectifier 32 and supplied to~~and~~ dc-link capacitors 62, 64 and 66. It may be noted that rectifier 32 maybe implemented using insulated gate bipolar transistors, insulated gate controlled thyristors, and/or silicon controlled rectifiers.

In the specification, please replace the original paragraph [0032] with the following amended paragraph [0032]:

[0032] First converter 34 and second converter 36 are configured to draw power from the charge stored in dc link capacitors ~~62, 64 and 66~~62 and 64. Each converter includes three pairs of active switching devices 68 arranged as shown in Fig.3. Each switching device 68 comprises an active switch 70 and diode 72 coupled in parallel to the active switch. At any instant of time, one switching device of each pair is in a conducting state ~~and while another~~state, while the other switching device for the same output phase is in a non-conducting state. Thus, the switching devices switch alternatively to generate an alternating output of a desired frequency, based upon the control signals applied to the switching devices. In one embodiment, the active switch is~~switches are~~ implemented as

insulated gate bipolar transistors (IGBT), or insulated gate controlled thyristors (IGCTs), etc.

In the specification, please replace the original paragraph [0045] with the following amended paragraph [0045]:

[0045] In step 128, a control signal is generated based on the sensed electrical parameter. In one embodiment, the control signal is generated by control circuitry. In step 130, the control signal is applied to a switching circuit configured to switch the first and second ~~eonverter~~ converters to an electrically parallel configuration. In a further embodiment, the switching circuit is configured for coupling the converters to the normal winding and the fault winding of the transformer.